DOACs vs Warfarin in Philadelphia-Negative MPN with Atrial Fibrillation

A propensity-matched analysis of thrombotic, bleeding, and mortality outcomes

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Context

- MPNs independently increase arterial and venous thrombosis risk, while disease biology and treatment can also increase bleeding.
- Atrial fibrillation adds a competing indication for long-term anticoagulation.
- Evidence guiding DOAC versus warfarin selection in this overlap population remains limited.

Objective

Compare thrombotic, bleeding, and mortality outcomes with DOACs versus warfarin at 12 and 24 months.

Methods

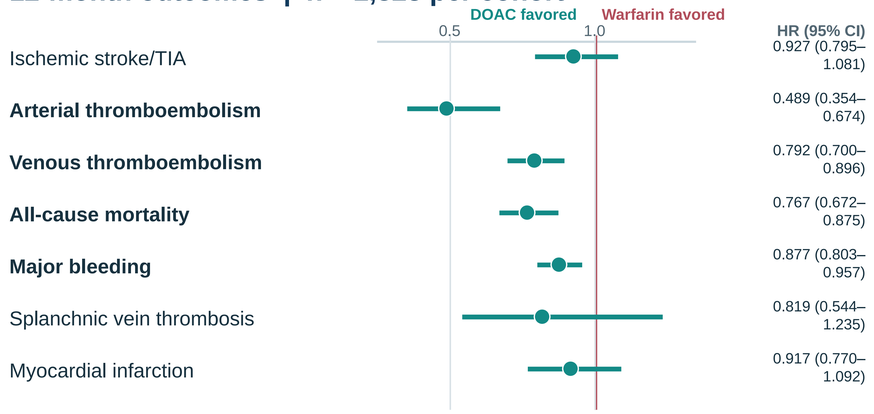
Design	Retrospective cohort study; TriNetX US Collaborative Network
Population	Adults with PV, ET, MF, or chronic MPN and concurrent AF
Exposure	DOAC without prior warfarin vs warfarin without prior DOAC
Analysis	1:1 propensity-score matching; time-to-event outcomes reported as HR (95% CI)
Outcomes	Stroke/TIA, arterial thromboembolism, VTE, mortality, major bleeding, splanchnic thrombosis, and MI

Matched cohorts

12 months	24 months
2,823 per group	2,739 per group

Results: comparative hazard ratios

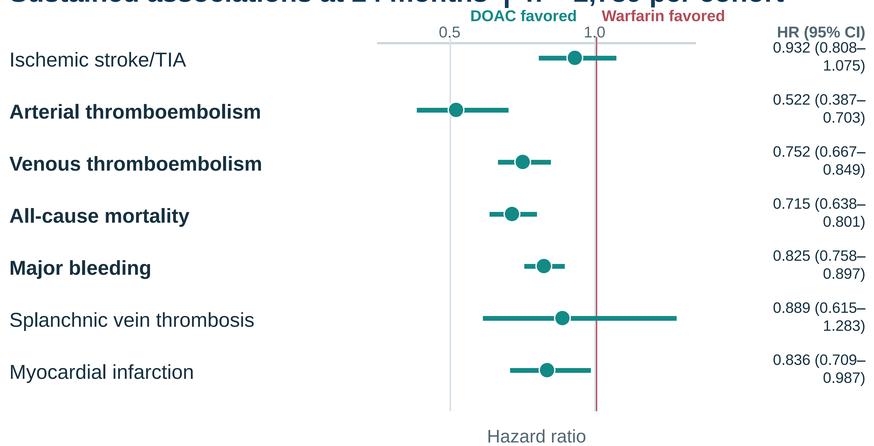
12-month outcomes | n = 2,823 per cohort



How to read: dot = HR • horizontal line = 95% CI • red vertical line = HR 1.0 • CI crossing 1.0 = no statistically significant difference

24-month outcomes

Sustained associations at 24 months | n = 2,739 per cohort



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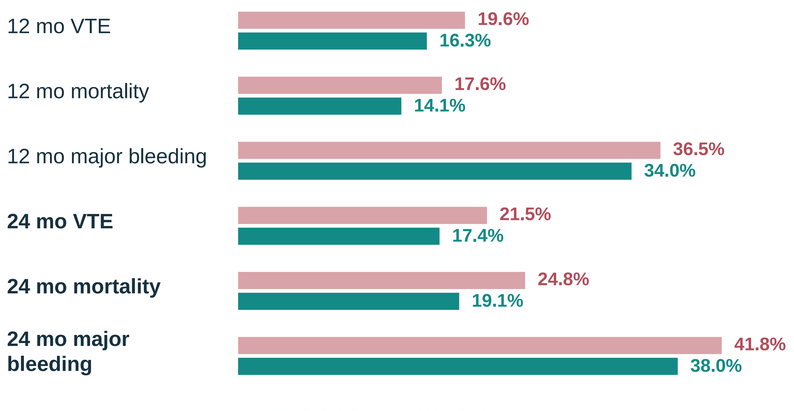
Absolute event burden

Observed risk (%)



Clinical interpretation

Across both follow-up windows, DOAC use was associated with:

- ~48–51% lower hazard of arterial thromboembolism
- 21–25% lower hazard of VTE
- 23–29% lower hazard of all-cause mortality
- 12–18% lower hazard of major bleeding

Stroke/TIA did not differ significantly at either follow-up window.

Limitations

- Retrospective, code-based analysis; residual confounding and misclassification remain possible.
- Medication exposure does not confirm adherence, dose, renal adjustment, or time in therapeutic range for warfarin.
- Results are associative and should not be interpreted as causal.

Conclusion

In this large propensity-matched analysis of patients with Philadelphia-negative MPN and AF, DOACs were associated with lower VTE, arterial thromboembolism, all-cause mortality, and major bleeding compared with warfarin, without a significant difference in ischemic stroke/TIA. These findings suggest DOACs may be a favorable anticoagulation strategy in this high-risk population.